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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/846,054	04/30/2001	John R. Gustafson	K35A0459	4487
35219	7590	05/27/2004	EXAMINER	
WESTERN DIGITAL TECHNOLOGIES, INC.			BLOUIN, MARK S	
20511 LAKE FOREST DR. -C205			ART UNIT	PAPER NUMBER
LAKE FOREST, CA 92630			2653	9

DATE MAILED: 05/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/846,054	GUSTAFSON ET AL.	
	Examiner	Art Unit	
	Mark Blouin	2653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,6-9,31,32,36-39 and 63 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,6-9,31,32,36-39 and 63 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5</u> . | 6) <input type="checkbox"/> Other: ____ |

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Detailed Action

Election/Restrictions

- Applicant's election without traverse of Claims 1,2,6-9,31,32,36-39, and 63 in Paper No. 8 is acknowledged.
- Claims 3-5,10-30,33-35,40-62, and 65-67 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 8.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1,2,6-9,31,32,36-39, and 63 are rejected under 35 U.S.C. 102(e) as being anticipated by Obara (USPN 6,246,137).
3. Regarding Claims 1,31, and 63, Obara shows (Figs. 1 and 3) a disc drive (Col 1, line 8) comprising a disc drive base, a spindle motor comprising a spindle motor base (1), a shaft (2) coupled to the spindle motor base, the shaft defining a longitudinal axis, a first bearing, the first bearing including a first inner race (3a) attached to the shaft, a first outer race (3b), a first ball (3) set between the first inner race and the first outer race, a second bearing spaced-apart from the first bearing along the longitudinal axis, the second bearing including a second inner race (4a)

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attached to the shaft, a second outer race (4b), a second ball (4) set between the second inner race and the second outer race, and a rotary hub (8) surrounding the shaft, the hub defining a hub extension (6), (See Examiner's Drawing), configured to exert a pre-loading force on the first inner race, the pre-loading force being directed toward the second inner race, and a hub extension between the first and second bearings that extends from the rotary hub toward the longitudinal axis beyond the first and second outer races and between the first and second inner races.

4. Regarding Claims 2 and 32, Obara shows (Figs. 1 and 3) the spindle motor, wherein the hub extension (6) is unitary and integral with the rotary hub (See Examiner's Drawing).

5. Regarding Claims 6 and 36, Obara shows (Figs. 1 and 3) the spindle motor, wherein the first and second outer races are attached to the rotary hub and wherein the hub extension (6) extends between the first and second bearings so as to form a first gap between the hub extension and at least a portion of the first inner race and a second gap between the hub extension and at least a portion of the second inner race (See Examiner's Drawing).

6. Regarding Claims 7,8,37, and 38, Obara shows (Figs. 1 and 3) the spindle motor, wherein the hub extension is dimensioned such that the first and second gap spans a first distance that is less than a non-operational deflection and greater than an operational deflection, the non-operational deflection and the operational deflection being defined as a deflection of the first inner race relative to the first outer race that would cause permanent deformation of the first bearing should the spindle motor be subjected to a shock event when the spindle motor is not in operation and is in operation, respectively. The distance of the gap is inherent in the design of the spindle motor in that operational deflections are tested and the gap distance would be made

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greater than the operational deflection in order to avoid interference between surfaces in a spinning motor, thus preventing damage from friction, and the distance of the gap of a non-operational deflection would be less, resulting from a sudden shock that would cause the inner race to travel beyond the distance of the gap possibly causing bearing deformation.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 9 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Obara (USPN 6,246,137).

9. Regarding Claims 9 and 39, Obara does not shows the spindle motor, wherein the hub extension is configured such that at least one of the first and second gaps is selected to be between about 0.0001 (2.54 microns) and about 0.0012 (30.48 microns) inches in width.

However, Obara teaches clearances (Fig. 1, (a) and (b)) of a few microns (Col 3, line 2) between the shaft (2), sealing element (7), and spacer (6), which can be interpreted in the range of about 0.0001 (2.54 microns) and about 0.0012 (30.48 microns) inches.

It would be obvious to one of ordinary skill in the art to use similar clearances in the gap width between the inner races and the hub extension in order to remain consistent with the overall dimensions and scale of the spindle motor.


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Conclusion


10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Blouin whose telephone number is (703) 305-5629. The examiner can normally be reached M-F, 6:00 am – 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful the examiner's supervisor, William Korzuch can be reached at (703) 305-6137. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314 for regular and After Final communications.

Any inquiry of general nature or relating to the status of application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.



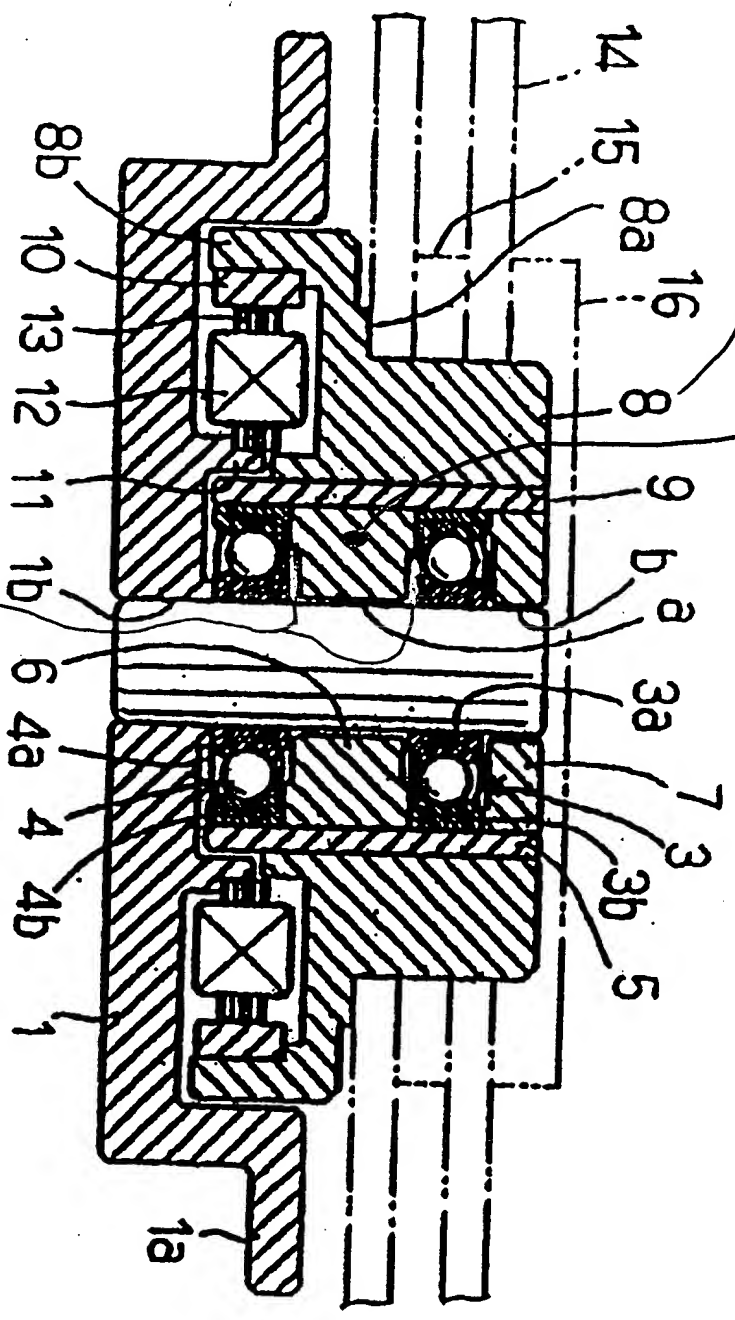
Mark Blouin
Patent Examiner
Art Unit 2653
May 11, 2004



DAVID OMETZ
PRIMARY EXAMINER
ART UNIT 2653

Co-hary
hub

Hub Extension (Unhary and integral with co-hary hub)



GAP BETWEEN 1st and 2nd INNER RINGS

EXAMINER'S DRAWING